

REMARKS

In the Office action of June 24, 2008, claims 3 and 4 were objected to as being dependent on a rejected claim, but were indicated as allowable if rewritten to include all of the limitations of the claims from which they depended and such indication is gratefully acknowledged.

In response to this indication, claims 3 and 4 have been cancelled without prejudice, and claims 1 and 2 have been amended to include the matter of claims 3 and 4, respectively, with the exception of the calculation recitations.

It is emphasized here that the difference between claim 1 is that it pertains to use of a power angle meter on a non-salient pole synchronous machine, whereas claim 2 relates to a method of use of a power angle meter on a salient pole synchronous machine.

In addition, new claims 5 and 7 have been added to depend from amended claim 1 and new claims 6 and 8 have been provided to depend from amended claim 2.

The basis for the newly added claim 5 is: the original English specification, line 32 of page 43 to line 20 of page 46;

1. The basis for the newly added claim 6 is: the original English specification, line 27 of page 40 to line 31 of page 43;

2. The basis for the newly added claim 7 is: the original English specification, line 17 of page 36 to line 8 of page 37, line 26 of page 38 to line 2 of page 39, and lines 30-32 of page 39;

3. The basis for the newly added claim 8 is: the original English specification, line 17 of page 22 to line 10 of page 23, line 27 of page 24 to line 12 of page 25, and lines 29-32 of page 25.

The reasons why the claims of the present invention possess inventiveness:

In the new claims, the calculation recitations in the original claims 3, 4 have been deleted, original claims 2, 3 (non-salient pole machine) have been incorporated into claim 1 to be new claim 1, and original claims 2, 4 (salient pole machine) have been incorporated into claim 2. After comparing the present invention with the references, the applicant's comments are listed below:

1. The methods provided by the references can only obtain the electric power angle vector graph or synchronous voltage vector graph of the synchronous motor. The method of the present invention is characterized in that the conventional electric power angle vector graph or synchronous voltage vector graph of the synchronous motor is displayed by using a mechanical model of the motor, and a dynamic composite power angle graph which varies with operating states of the synchronous motor is displayed online in real time.

2. As compared with graphs of power angle or synchronous phase angle difference of the synchronous motor in the references, the method of the present invention adds the following technical features, i.e. the following mechanical models: the rigid bodies of rotor and stator of the synchronous motor, the levers and springs of rotor and stator of the synchronous motor, and etc. The dynamic composite power angle graph of the present invention may intuitively reflect the operating state of a synchronous motor from both electric and mechanical aspects. The present invention may not only display the electric power angle vector graph of the synchronous motor, but also display the composite power angle graph, motor mechanical model graph, motor mechanical model schematic graph and motor synchronous composite power angle graph of the synchronous motor.

3. As compared with the references, the method of the present invention also adds the following technical features: among the depicted composite power angle graph and electric vector graph of the synchronous motor, the present invention adds mechanical model graphs of the synchronous motor and also adds the assistant lines of E_qM and E_dN , is easier to illustrate the power distribution, active and reactive components of stator voltage, active and reactive components of stator current, and active and reactive components of spring pull of the synchronous motor, and can also illustrate the magnitude of the variance of the magnetic excitation adjustment signal.

4. The technical effects of the present invention also exist in: the motor operating state graphs depicted for measuring the operating state of the synchronous motor by using the composite power angle meter of the present invention are advantageous for operators of various specialties to dialectically understand the operation principle of the synchronous motor from both electric and mechanical aspects, provide intuitive models for mechanical analysis of parallel-network operating state of the synchronous motor, and may be effective tools for the magnetic

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excitation characteristics analysis, magnetic excitation adjustment, synchronous parallel-network, and operation monitoring and controlling of the synchronous motor.

The technical effects of the present invention also exist in: the end composite magnetic leakage graph of the synchronous motor depicted by the present invention may be applied to analyze and monitor the end heat-emitting condition of the synchronous motor.

In conclusion, the technical features, technical effects and application scopes of the present invention are evidently different from those of the references, and thus, the amended claims of the present invention do possess inventiveness over the references.

CONCLUSION

In view of the Amendment and Remarks, reconsideration of the application is respectfully requested. After the amendment there are two independent claims and six total claims, so no fee for additional claims is due. After the Amendment, claims 1, 2 and 5-8 are still pending and a Notice of Allowance for these claims is respectfully requested.

Respectfully submitted,

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